

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-6 (Cancelled)

Claim 7 (Previously Presented): A method for producing an allyl compound comprising:

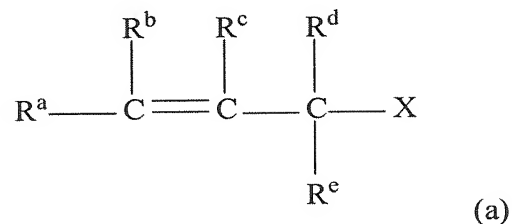
reacting a first allyl compound of formula (a) with an oxygen nucleophilic agent in the presence of a catalyst containing a monodentate phosphite compound and at least one transition metal compound containing a transition metal selected from the group consisting of transition metals belonging to Group 8 to Group 10 of the Periodic Table, under conditions suitable for producing a second allyl compound;

wherein the monodentate phosphite compound has the following formula (1):



wherein  $\text{R}^1$ ,  $\text{R}^2$  and  $\text{R}^3$  are independently a linear or branched alkyl group which may have a substituent;

wherein the first allyl compound has the following formula (a):



wherein  $\text{R}^a$  to  $\text{R}^e$  are respectively independently a hydrogen atom, a halogen atom, a hydroxyl group, an amino group, a formyl group, an alkyl group, an aryl group (including a heterocyclic compound forming an aromatic  $6\pi$  electron cloud on the upper and lower sides of the ring), an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group, an amide group, an acyl group or an acyloxy group; among these groups, the amino group, the alkyl group, the aryl group, the alkoxy group, the aryloxy group, the alkylthio group, the

arylthio group, the acyl group or the acyloxy group may have a substituent; and when any of  $R^a$  to  $R^c$  has a carbon chain, the carbon chain may have at least one carbon-carbon double bond or triple bond, and

X is a halogen atom, a hydroxyl group, a nitro group, an amino group, a sulfonyl group, a sulfonate group, an acyloxy group, a carbonate group, a carbamate group, a phosphate group, an alkoxy group or an aryloxy group; wherein among these groups, the amino group, the sulfonyl group, the sulfonate group, the acyloxy group, the carbonate group, the carbamate group, the phosphate group, the alkoxy group and the aryloxy group may have a substituent; and wherein when X has a carbon chain, the carbon chain may have at least one carbon-carbon double bond or triple bond; and at least two optional groups among  $R^a$  to  $R^c$  and X may bond to each other to form at least one cyclic structure; and

wherein the second allyl compound is a compound in which X in the first allyl compound is substituted with AO; and

wherein the oxygen nucleophilic agent is not the same as the monodentate phosphite compound and is a compound different from substituent X and its proton adduct X-H eliminated from the allyl starting material compound by reaction, and is a compound containing an oxygen atom expressed by AO-H or its deprotonated form  $AO^-$ , in which A is a hydrogen atom or an organic group having a carbon atom, nitrogen atom, phosphorus atom, or a sulfur atom bonded to the oxygen atom of the oxygen nucleophilic agent.

Claim 8 (Previously Presented): The method of Claim 7, wherein the first allyl compound has a molecular weight of 1,500 Da or less or contains at most 100 carbon atoms.

Claim 9 (Previously Presented): The method of Claim 7, wherein R<sup>a</sup> to R<sup>c</sup> are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, aryl, and substituted aryl.

Claim 10 (Previously Presented): The method of Claim 7, wherein X is a halogen atom.

Claim 11 (Previously Presented): The method of Claim 7, wherein X is a hydroxy group, an alkoxyl group or an aryloxy group.

Claim 12 (Previously Presented): The method of Claim 7, wherein X is a nitro group or an amino group.

Claim 13 (Previously Presented): The method of Claim 7, wherein X is a sulfonyl group or a sulfonate group.

Claim 14 (Previously Presented): The method of Claim 7, wherein X is an acyloxy group, a carbonate group, a carbamate group, or a phosphate group.

Claim 15 (Previously Presented): The method of Claim 7, wherein the oxygen nucleophilic agent is an alcohol, a deprotonated alcohol, a hydroxyaryl, a deprotonated hydroxyaryl, an aromatic carboxylic acid, or a deprotonated aromatic carboxylic acid.

Claim 16 (Previously Presented): The method of Claim 7, wherein the catalyst contains a monodentate phosphite compound of formula (1), wherein at least one of R<sup>1</sup>, R<sup>2</sup>

and R<sup>3</sup> of the monodentate coordinated phosphite compound of formula (1) is a branched chain-like alkyl group.

Claim 17 (Cancelled)

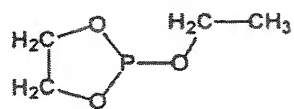
Claim 18 (Previously Presented): The method of Claim 7, wherein the catalyst contains a monodentate phosphite compound of formula (1), wherein R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are each independently an alkyl group which may have a substituent.

Claim 19 (Previously Presented): The method of Claim 7, wherein the catalyst contains a monodentate phosphite compound of formula (1), wherein at least one of R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> is a carbon chain having a carbon-carbon double bond or triple bond.

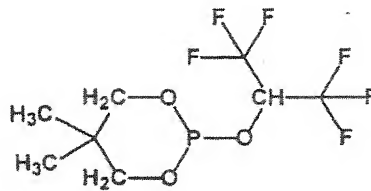
Claim 20 (Previously Presented): The method of Claim 7, wherein the catalyst contains a monodentate phosphite compound of formula (1), wherein at least two of R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> bond to each other to form at least one cyclic structure containing oxygen.

Claim 21 (Previously Presented): The method of Claim 7, wherein said monodentate compound is selected from the group consisting of compounds of formulas L-1, L-2, L-3, L-4, L-5, L-6, L-7, L-8, L-9, and L-10;

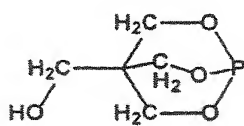
wherein formulas L-1, L-2, L-3, L-4, L-5, L-6, L-7, L-8, L-9, and L-10 are:



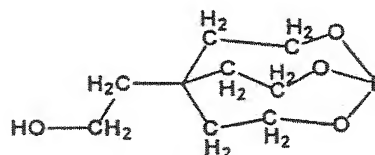
(L-1)



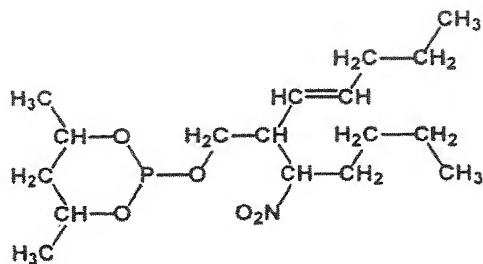
(L-2)



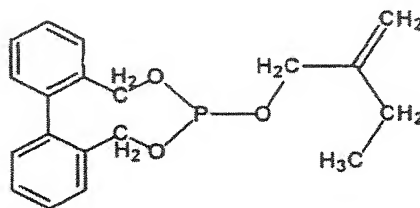
(L-3)



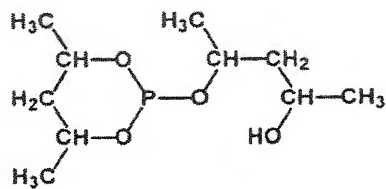
(L-4)



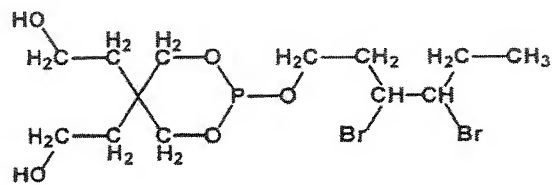
(L-5)



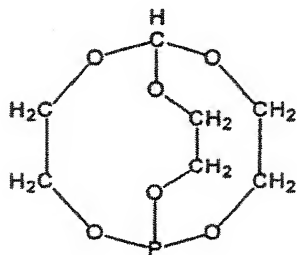
(L-6)



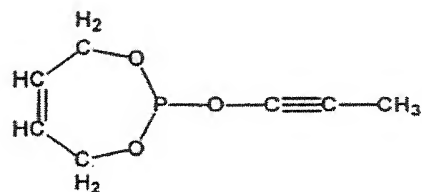
(L-7)



(L-8)



(L-9)



(L-10)

Claim 22 (Previously Presented): The method of Claim 7, wherein the transition metal compound is at least one compound selected from the group consisting of a ruthenium compound, a rhodium compound, an iridium compound, a nickel compound, a palladium compound and a platinum compound.

Claim 23 (Previously Presented): The method of Claim 7, wherein the transition metal compound is a palladium compound.

Claim 24 (Previously Presented): The method of Claim 7, wherein the oxygen nucleophilic agent is a compound different from a substituent X and its proton adduct X-H is eliminated from the allyl starting material compound by reaction, and is a compound containing an oxygen atom expressed by AO-H or its deprotonated form of AO<sup>-</sup>, in which A is an organic group having a carbon atom, a nitrogen atom, a phosphorus atom or a sulfur atom bonded to an oxygen atom.

Claim 25 (Previously Presented): The method of Claim 7, wherein a phosphonium compound is present during the reaction.

Claim 26 (Previously Presented): The method of Claim 7, wherein an ammonium compound is present during the reaction.

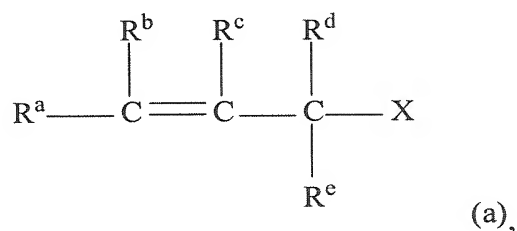
Claims 27-29 (Cancelled)

Claim 30 (Previously Presented): The method of Claim 7, wherein R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are branched alkyl groups .

Claim 31 (Previously Presented): The method of Claim 7, wherein  $R_1$ ,  $R_2$  and  $R_3$  are linear alkyl groups.

Claim 32 (Previously Presented): The method of Claim 7, wherein  $R_1$ ,  $R_2$  and  $R_3$  are linear  $C_1$ - $C_{10}$  alkyl groups.

Claim 33 (New): A method for producing an allyl compound comprising:  
reacting a first allyl compound and an oxygen nucleophilic agent in the presence of a catalyst to form a second allyl compound different that the first allyl compound;  
wherein said first allyl compound is:

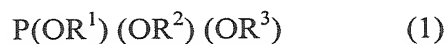


wherein  $R^a$  to  $R^e$  are respectively independently a hydrogen atom, a halogen atom, a hydroxyl group, an amino group, a formyl group, an alkyl group, an aryl group (including a heterocyclic compound forming an aromatic  $6\pi$  electron cloud on the upper and lower sides of the ring), an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group, an amide group, an acyl group or an acyloxy group; among these groups, the amino group, the alkyl group, the aryl group, the alkoxy group, the aryloxy group, the alkylthio group, the arylthio group, the acyl group or the acyloxy group may have a substituent; and when any of  $R^a$  to  $R^e$  has a carbon chain, the carbon chain may have at least one carbon-carbon double bond or triple bond, and X is a halogen atom, a hydroxyl group, a nitro group, an amino group, a sulfonyl group, a sulfonate group, an acyloxy group, a carbonate group, a carbamate

group, a phosphate group, an alkoxy group or an aryloxy group; wherein among these groups, the amino group, the sulfonyl group, the sulfonate group, the acyloxy group, the carbonate group, the carbamate group, the phosphate group, the alkoxy group and the aryloxy group may have a substituent; wherein when X has a carbon chain, the carbon chain may have at least one carbon-carbon double bond or triple bond; and at least two optional groups among  $R^a$  to  $R^e$  and X may bond to each other to form at least one cyclic structure;

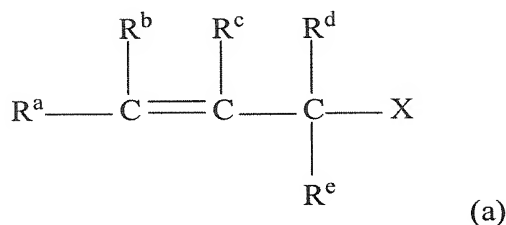
wherein the oxygen nucleophilic agent is AO-H, wherein A is an organic group; and

wherein the catalyst contains (i) at least one transition metal compound containing a transition metal selected from the group consisting of transition metals belonging to Group 8 to Group 10 of the Periodic Table and (ii) a monodentite phosphite that is:



wherein  $R^1$ ,  $R^2$  and  $R^3$  are independently a linear or branched alkyl group which may have a substituent; and

wherein the second allyl compound is:



wherein  $R^a$  to  $R^e$  are described above, but wherein X is AO.

Claim 34 (New): The method of claim 33, wherein the oxygen nucleophilic agent is an alcohol, hydroxyl aryl, aliphatic carboxylic acid or aromatic carboxylic acid.